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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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NIXON & VANDERHYE, PC
901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203

EXAMINER

LAUX, JESSICA L

ART UNIT	PAPER NUMBER
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3635

MAIL DATE	DELIVERY MODE
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07/07/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/578,843

Applicant(s)

KENNEDY, STEPHEN JOHN

Examiner

JESSICA LAUX

Art Unit

3635

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 May 2010.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
4a) Of the above claim(s) 3-5, 13 and 15 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1, 2, 6-12, 14 and 16-19 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 10 May 2006 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SI/08)
Paper No(s)/Mail Date 10/19/2007, 5/10/2008
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election of Species I and Species B in the reply filed on 5/18/2010 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 3-5,13,15 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim.

Specification

The disclosure is objected to because of the following informalities:

Page 5, line 9 recites core material 133 which should correctly be core material 13.

Throughout the specification applicant interchanges between the terms balls and forms for element 14, which is confusing and inconsistent. The examiner requests applicant to choose one term to be consistent throughout the disclosure and claims.

Page 5, line 19 recites balls 13 which should correctly be balls 14.

Appropriate correction is required.

The use of the trademark Kevlar [™] and Spectra [™] has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1,8,9,10,19 are rejected under 35 U.S.C. 112, first paragraph, because the best mode contemplated by the inventor has not been disclosed. Evidence of concealment of the best mode is based upon:

The specification for a diameter from 20-100mm which excludes anything above 100 or below 20); or 1/N where N is from 1-5 the distance of the between the outer layers where it is disclosed that the distance may be 20-100mm or 15-200mm; or 20-200% the distance between the outer layers. All of these have overlapping scope and scope which excludes values included by others which is unclear, indefinite, confusing and would render one skilled in the art unable to contemplate applicant's best mode or how to make the invention commensurate in scope with disclosure.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 9-10, 16,18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 9-10 - The claims lack antecedent basis in the specification for "forms have a diameter greater than or equal to 20mm", "forms have a diameter less than or equal to 100mm". Instead the specification only provides antecedent basis for a diameter from 20-100mm (which excludes anything above 100 or below 20); or 1/N where N is from 1-5 the distance of the between the outer layers where it is disclosed that the distance may be 20-100mm or 15-200mm; or 20-200% the distance between the outer layers.

Regarding claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

The terms "Kevlar[™]" and "Spectra^(™)" render the claim indefinite since the trademark cannot be used properly to identify any particular material or product, thus such a use of the trademark constitutes an improper use of the trademark and renders the claim indefinite. See MPEP 2473.05(u).

Regarding claim 16 - The claims lack antecedent basis in the specification for "a thickness great than or equal to 20mm", instead the specification provides for a thickness from 20-100mm or 15-200mm but does not provide for a thickness above 200mm.

Regarding claim 18 - The claims lack antecedent basis in the specification for "a thickness great than or equal to 0.5mm", instead the specification provides for a thickness from 0.5-20mm or 1-50mm but does not provide for a thickness above 50mm.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 1 recites the broad recitation "have a principal dimension in the range of from 20-200% of the distance between the outer metal layers", and depending claims also recites "diameter is equal to 1/N of the distance between said outer plates, N being an integer in the range of from 1-5", "have a diameter greater than or equal to 20mm", or "have a diameter less than or equal to 100mm" which is the narrower statement of the range/limitation in view of the above noted issues this causes the claims to be indefinite as it is unclear for which metes and bounds applicant is seeking protection.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2,6-8,12,17,19 are rejected under 35 U.S.C. 102(b) as being anticipated by GB1070874.

Claim 1. GB1070874 discloses a structural sandwich plate member comprising:
first and second outer plates (3 as seen in figure 1, which can be of metal as noted on page 4, lines 8-14);

a core of plastics or polymer material (2) bonded to said outer plates with sufficient strength to transfer shear forces therebetween; and

a plurality of lightweight forms (1) within the core, wherein said forms do not tessellate in a plane parallel to said outer metal layers and have principal dimensions in the range of from 20 to 200% of the distance between said outer metal layers (as seen in figures 1-2).

Claim 2. A structural sandwich plate member according to claim 1 wherein said lightweight forms are arranged in a single layer (as seen in figures 1-2 and at page 2, lines 107-110).

Claim 6. A structural sandwich plate member according to claim 1 wherein said lightweight forms are hollow (page 2, lines 103-104).

Claim 7. A structural sandwich plate member according to claim 1 wherein said forms are spherical (page 2, lines 103 -104).

Claim 8. A structural sandwich plate member according to claim 7 wherein said forms have a diameter substantially equal to 1/N of the distance between said outer

plates, N being an integer in the range of from 1 to 5 (where the spheres are equal to the distance (being 1/1) between said outer plates; as seen in the figures 1-2).

Additionally it is noted that GB1070874 discloses at page 2, lines 34-48 that the size, wall thicknesses and materials of the spheres could be changed to affect changes in the properties of the panels.

Claim 12. A structural sandwich plate member according to claim 1 wherein said forms are made of metal, ceramic, or a high tensile strength fabric (page 3, lines 2-3 disclose that the spheres can be made of metal).

Claim 17. A structural sandwich plate member according to claim 1 wherein said outer plates are made of metal (as noted on page 4, lines 8-14) .

Claim 19. GB1070874 discloses a method of manufacturing a structural sandwich plate member comprising the steps of :

providing first and second outer plates in a spaced-apart relationship and a plurality of lightweight forms within the space between said plates (page 3, line 103- page 4, line 15), wherein said forms do not tessellate in a plane parallel to said outer metal layers and have principal dimensions in the range of from 20 to 200% of the distance between said plates (as seen in figures 1-2);

injecting uncured plastics or polymer material to fill the space (page 3, lines 107- page 4, lines 15) defined between said outer plates and around said plurality of forms; and

allowing said plastics or polymer material to cure to bond said outer plates together with sufficient strength to transfer shear forces therebetween (page 3, line 103- page 4, line 115).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11, 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB1070874.

Claim 11. GB1070874 discloses the structural sandwich plate member according to claim 6, wherein said forms have a solid skin, but does not disclose that they are made of polypropylene. Instead GB1070874 discloses they can be made of a plastic (where polypropylene is a plastic) and that one of skill would have recognized that appropriate selection of the materials for spheres will have a direct affect on the strength to weight properties of the panel to meet certain requirements.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to choose polypropylene (where applicant discloses in the specification at page 2, lines 28-35 that polypropylene sphere forms are known and common and readily available), since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Claims 16-17. GB1070874 discloses the structural sandwich plate member according to claim 1 but does not disclose that said core has a thickness greater than or equal to 20mm or that the outer plates have a thickness greater than or equal to 0.5mm.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify dimensions of GB1070874 to be as claimed, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. Additionally it is noted that Applicant discloses in the specification that at page 4, line 18 that the core can be in the range of from 15-200mm (a very broad range when considering the art) and therefore it appears that the dimension is a mere design choice and the panel of the prior art would perform equally with any dimension.

Claims 9-10,14 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB1070874 in view of Duke (5251414).

Claim 9. GB1070874 discloses the structural sandwich plate member according claim 1 but does not expressly disclose that said forms have a diameter greater than or equal to 20mm, but does disclose that the sizes of the spheres may be selected for appropriate strength requirements as the size of the spheres has a direct correlation to the strength of the panel (Page 2, lines 34-43).

Additionally it is noted in that Applicant discloses in the specification that several sizes for the spheres are acceptable (page 2, lines 28-35 disclose a diameter of 1/N where N=1-5, and line 2 discloses that the dimension is in the range of 20-200% the

distance between the outer layers and at page 4 lines 30-35 discloses that the diameter is substantially equal to the distance between the outer plates and page also discloses at lines 15-20 that the core, the distance between the plates, is in the range of 15-200mm.

At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to modify the forms/spheres of GB1070874 to have a diameter greater than or equal to 20mm because applicant has not disclosed that such a dimension provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected the panel of GB1070874, and applicant's invention to perform equally well with either the diameter taught by the prior art or the claimed diameter because both diameters would perform the same function of providing support to and reducing the weight of the panel equally well considering the design and function of the panel (where it has been disclosed in the prior art that one of skill would readily recognize that changing the size has a direct correlation on the strength and weight of the panel and one would choose to do so to meet the specific requirements of the panel).

Therefore, it would have been prima facie obvious to modify GB1070874 to obtain the invention as specified in claim 9 because such a modification would have been considered a mere design consideration which fails to patentably distinguish over the prior art of.

Claim 10. GB1070874 discloses the structural sandwich plate member according to claim 1, but does not disclose that said forms have a diameter less than or equal to 100mm.

Duke discloses a structural sandwich plate member having facing sheets with a foam and forms within the foam between the sheets where the forms have a diameter less than or equal to 100mm (Col. 5, lines 51-52).

Claim 14. GB1070874 discloses the structural sandwich plate member according to claim 1 but does not disclose that the spheres are filled with any substance.

Duke discloses that it is known to provide spheres filled with a substance such as air or other gases (Col. 6, lines 2-3) but does not expressly disclose that the gas is an inert gas, or that they are filled with a fire retardant substance, a thermal or acoustic insulating fluid or a partial vacuum.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the spheres of Duke to be filled with an inert gas or to be filled with a fire retardant substance, a thermal or acoustic insulating fluid or a partial vacuum, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice (*In re Leshin*, 125 USPQ 416); and to substitute the sphere of GB1070874 with said sphere as one of ordinary skill in the art has good reason to pursue the known options within his or her technical grasp and such a modification would provide additional protective features to the panel in a predictable manner.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JESSICA LAUX whose telephone number is (571)272-8228. The examiner can normally be reached on Monday thru Thursday, 9:00am to 5:00pm (est).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Chilcot can be reached on 571-272-6777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jessica Laux/
Examiner, Art Unit 3635

